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# REPORT OF THE WORKING GROUP ON ELECTRONIC DATA INTERCHANGE (EDI) ON THE WORK OF ITS THIRTIETH SESSION
(Vienna, 26 February-8 March 1996)

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Annex

Text proposed for addition to the draft UNCITRAL Model Law on Legal Aspects of Electronic Data Interchange (EDI) and Related Means of Communication

(as approved by the UNCITRAL Working Group on Electronic Data Interchange at its thirtieth session, held at Vienna, from 26 February to 8 March 1996) ..... 31

## INTRODUCTION

1. Pursuant to a decision taken by the Commission at its twenty-fifth session [1], in 1992, the Working Group on Electronic Data Interchange devoted its twenty-fifth to twenty-eighth sessions to the preparation of the draft UNCITRAL Model Law on Legal Aspects of Electronic Data Interchange and Related Means of Communication (reports of those sessions are found in A/CN.9/373, 387, 390 and 406). The text of the draft Model Law, together with a compilation of comments by Governments and interested organizations (A/CN.9/409 and Add. 1 to 3) was placed before the Commission at its twenty-eighth session for review and adoption.

2. At its twenty-ninth session, the Working Group considered a draft Guide to Enactment of the Model Law (the report of that session is found in A/CN.9/407). The Working Group also considered in the context of a general debate on possible future work the issues of incorporation by reference and of negotiability of rights in goods in an electronic environment. As regards incorporation by reference, the Working Group had before it two proposals for a draft provision, one submitted by the observer for the International Chamber of Commerce (A/CN.9/WG.IV/WP.65) and another submitted by the United Kingdom of Great Britain and Northern Ireland (A/CN.9/WG.IV/WP.66). After discussion, the prevailing view was that the issue of incorporation by reference was not mature for inclusion in the Model Law and deserved further study. A view was expressed that the issue should be addressed in the context of future work on negotiability of rights in goods (A/CN.9/407, paras. 100 to 105).

3. With respect to the issues of negotiability and transferability of rights in goods in an EDI context, the Working Group had before it two brief notes, one submitted by the United Kingdom of Great Britain and Northern Ireland (A/CN.9/WG.IV/WP.66) and another submitted by the United States of America (A/CN.9/WG.IV/WP.67).

4. It was noted that the functions of bills of lading that might be affected by the use of EDI communications included those of serving: (1) as a receipt for the cargo by the carrier; (2) as evidence of the contract of carriage with regard to its general terms and the particular details of vessel, loading and discharge ports, and nature, quantity and condition of the cargo; and (3) as a document giving the holder a number of rights, including the right to claim and receive delivery of the goods at the port of discharge and the right to dispose of the goods in transit.

5. The first two functions could be easily performed by EDI since the receipt for the cargo and information about the contract of carriage could be given by means of data messages such as the UN/EDIFACT messages. However, the third function (as document of title) raised difficulties in an EDI environment since, in the absence of a single piece of paper, it was difficult to establish the identity of the exclusive holder to whom the carrier could deliver the goods without running the risk of being faced with a claim by another party for misdelivery. In that regard, the Working Group noted that a central problem in the use of EDI bills of lading was to guarantee the singularity, or uniqueness, of the message to be relied upon by the carrier for delivering the goods. While any data message could probably be rendered unique through the use of cryptography, the possibility that the message might be fraudulently or mistakenly multiplied could not be excluded. The Working Group noted that solutions to that problem might be found in security, time-stamping or similar techniques or through a central registry in which the holder could register its rights.

6. The Working Group also noted that work on negotiability and transferability of documents of title

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[1] Official Records of the General Assembly, Forty-seventh Session, Supplement No. 17 (A/47/17), paras. 140-148.

in goods by EDI means could include establishing a preliminary list of areas of commercial practice to be covered, validating agreements for negotiability and transferability of rights in goods through EDI, establishing criteria for parties to be holders in due course for the transfer of rights in goods or subsequently to negotiate such rights through EDI, determining the effect of negotiation of documents of title in EDI, establishing default rules for allocation of risk and electronic registries. With regard to electronic registries, it was noted that they could be governmental, central or private. The purpose, the access, the administrator, the costs, the insurance, the allocation of risks and the security could vary depending on the nature of the registry.

7. The Working Group engaged in a general debate, with a view to identifying the scope of possible future work and issues that could be addressed. With regard to the scope of future work, one suggestion was that the work should cover multimodal transport documents of title since they essentially fulfilled the same functions and raised similar issues. Another suggestion was that, while work could include transport documents of title in general, particular emphasis should be placed on maritime bills of lading since the maritime transport area was the area in which EDI was predominantly practised and in which unification of law was urgently needed in order to remove existing impediments and to allow the practice to develop.

8. In support, it was pointed out that EDI messaging was currently restricted to the exchange of information messages in the North Atlantic maritime routes and could not develop without the support of a legal regime that would validate, and provide certainty about, transport documents in electronic form. For example, it was stated that there was a need to facilitate delivery of the cargo at the port of discharge without production of a paper bill of lading, which was often necessary for a number of reasons. One reason was that the cargo might reach the port of discharge before the documents necessary for delivery. Another reason was that often the buyer had to receive delivery and sell the cargo in order to be able to pay the price of the cargo and the freight. In addition, it was stated that there was a need to remove the legal uncertainty as to who bore the risk of the cargo not corresponding to its description when discharged. It was pointed out that usually the shipper provided the description of the goods and the bill of lading included a disclaimer that the description was that of the shipper; such disclaimer clauses were not always valid. Moreover, it was stated that there was a need to establish a functional equivalent replicating the uniqueness of the paper bill of lading, which was essential for its function as a title document.

9. Other suggestions were to address all documents of title covering tangible goods (e.g., warehouse receipts), or all documents of title covering tangible and intangible goods, or all negotiable (or even non-negotiable) instruments. In opposition to those suggestions, it was pointed out that covering such a broad range of documents would complicate work since the functions of the respective documents were different, which would make the elaboration of specific rules necessary.

10. After discussion, it was agreed that future work could focus on EDI transport documents, with particular emphasis on maritime electronic bills of lading and the possibility of their use in the context of the existing national and international legislation dealing with maritime transport. After having established a set of rules for the maritime bills of lading, the Working Group could examine the question whether issues arising in multimodal transport could be addressed by the same set of rules or whether specific rules would need to be elaborated.

11. The Working Group then turned to a discussion of possible issues that could be addressed in the context of future work on maritime bills of lading. A number of issues were mentioned. One issue was to ensure the uniqueness of an electronic bill of lading that would allow its "holder" to dispose of the cargo in transit by electronic means while protecting the carrier from the risk of misdelivery. A number of possible ways to address that issue were suggested, including private keys to be used in communications from party to party, electronic certificates, smartcards and registries. With regard to

registries, it was pointed out that a legal regime would need to be devised addressing issues such as subject of registration, parties that could register, parties that would have access to the registry and towards whom the registration could produce effects, confidentiality, accuracy and completeness of the information registered, liability for errors and effects on third parties.

12. Another issue was the definition of the holder in an EDI environment. It was pointed out that in a paper context the holder was defined on the basis of physical possession of the paper bill of lading and was protected against good faith acquisition of rights in the goods by third parties in that possession of the bill of lading functioned as notice to third parties. In an EDI environment, where possession was not possible, the holder might be protected by other means (e.g., registration, use of public and private key sets) or might not be protected at all. Another issue involved the rights and obligations of the holder and the issuer of EDI transport documents (e.g., right of the holder to give instructions in transit and obligation of the issuer to receive and execute those instructions). It was pointed out that, in a paper-based environment, the rights of a holder were based on three principles: (1) the bill of lading was conclusive evidence of title in the goods only after endorsement (conclusive evidence rule); (2) the endorsee was the only party entitled to claim delivery of the cargo at the discharge point; and (3) only the endorsee was entitled to instruct the carrier to vary the contract and make another endorsement. In this respect, it was stated that negotiability needed to be studied in the context of trade law, security law and transportation law. It was explained that property would not be of use if acquired under trade law but effectively lost under transportation law because no right of stoppage or control could be exercised.

13. In addition, it was pointed out that the holder could have a right to possess the goods, a property right in the goods, or a right to receive delivery of the goods arising from a sales contract. It was explained that from the point of view of the carrier the most important question was who had possessory title in the goods, in other terms, to whom should the carrier deliver the goods. Yet another issue was the allocation of liability among the shipper, carrier, consignee and, possibly, a registry.

14. Other issues suggested for study were: the effects of transfer of EDI transport documents on third parties (e.g., when transfer is effective towards the carrier, third parties in the chain of endorsees, third parties not shown in the EDI bill of lading); the rights of the rightful holder in case of a wrongful transfer of the goods and the rights of the transferee in case its title proved to be defective (subject to other parties' rights); timeliness of transfer in an EDI environment; relative priority among multiple claimants of the same cargo; timeliness of messages (e.g., some messages related to pre-contractual terms might create rights and obligations); incorporation by reference; issues of security (principles of identification, authentication, integrity, non-repudiation) designed to promote negotiability in an open EDI environment. It was stated that the issues of security should be considered with respect to a broad range of issues regarding negotiability. In connection with its discussion of security issues, in particular the use of cryptography, the Working Group agreed that possible future work by UNCITRAL should not affect mandatory rules of national legislation adopted for public policy reasons in certain States to restrict the use of cryptography or the export of cryptography-related techniques.

15. After discussion, the Working Group requested the Secretariat to prepare a background study on negotiability and transferability of EDI transport documents, with particular emphasis on EDI maritime transport documents, taking into account the views expressed and the suggestions made with regard to the scope of future work and the issues that could be addressed. A number of other topics were suggested for inclusion in the study, including a report on the potential problems for the use of EDI in maritime transport under existing international instruments and a report on the work undertaken by other organizations in related areas of work. In that connection, the view was expressed that work undertaken within CMI, or the BOLERO project, were aimed at facilitating the use of EDI transport

documents but did not, in general, deal with the legal effects of EDI transport documents. It was stated that particular attention should be given in the study to the ways in which future work by UNCITRAL could bring legal support to the new methods being developed in the field of electronic transfer of rights (A/CN.9/407, paras. 106 to 118).

16. At its twenty-eighth session, in 1995, the Commission adopted the text of articles 1 and 3 to 11 of the draft Model Law. At the close of the discussion on draft article 11, the Commission noted that it had not completed its consideration of the draft Model Law and decided to place the draft Model Law, together with the draft Guide to Enactment of the Model Law, on the agenda of its twenty-ninth session to be held in New York from 28 May to 14 June 1996. It was agreed that the discussion should be resumed at the twenty-ninth session of the Commission with a view to finalizing the text of the Model Law and adopting the Guide to Enactment at that session.

17. With respect to future work in the area of electronic data interchange, the Commission noted that, at its twenty-seventh session, in 1994, general support had been expressed in favour of a recommendation made by the Working Group at its twenty-seventh session that preliminary work should be undertaken on the issue of negotiability and transferability of rights in goods in a computer-based environment as soon as the preparation of the Model Law had been completed. It was also noted that, on that basis, a preliminary debate with respect to future work to be undertaken in the field of electronic data interchange had been held in the context of the twenty-ninth session of the Working Group (for the report on that debate, see A/CN.9/407, paras. 106 to 118).

18. After discussion, the Commission endorsed the recommendation made by the Working Group that the Secretariat should be entrusted with the preparation of a background study on negotiability and transferability of EDI transport documents, with particular emphasis on EDI maritime transport documents (see above, para. 15). The Commission expressed the wish that the requested background study, for the preparation of which the cooperation of other interested organizations such as the Comité Maritime International (CMI) might be sought, would provide the basis on which to make an informed decision as to the feasibility and desirability of undertaking work in the area.

19. The Working Group on Electronic Data Interchange, which was composed of all the States members of the Commission, held its thirtieth session at Vienna from 26 February to 8 March 1996. The session was attended by representatives of the following States members of the Working Group: Algeria, Argentina, Australia, Austria, Bulgaria, Chile, China, Ecuador, France, Germany, Hungary, Iran (Islamic Republic of), Italy, Japan, Mexico, Poland, Russian Federation, Saudi Arabia, Singapore, Slovakia, Spain, Sudan, Thailand, United Kingdom of Great Britain and Northern Ireland, United States of America and Uruguay.

20. The session was attended by observers from the following States: Azerbaijan, Belarus, Canada, Czech Republic, Guatemala, Indonesia, Jordan, Kazakstan, Lebanon, Morocco, Netherlands, Oman, Pakistan, Portugal, Republic of Korea, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic and Turkey.

21. The session was attended by observers from the following international organizations: United Nations Conference on Trade and Development (UNCTAD), World Intellectual Property Organization (WIPO), Cairo Regional Centre for International Commercial Arbitration, Comité Maritime International (CMI), International Association of Ports and Harbors (IAPH), International Chamber of Commerce (ICC) and Society for Worldwide Interbank Financial Telecommunication (S.W.I.F.T.).

22. The Working Group elected the following officers:

Chairman: Mr. José-María Abascal Zamora (Mexico);

Rapporteur: Mr. Eu Jin Chua (Singapore).

23. The Working Group had before it the following documents: provisional agenda (A/CN.9/WG.IV/WP.68), and a note by the Secretariat (A/CN.9/WG.IV/WP.69).

24. The Working Group adopted the following agenda:

1. Election of officers

2. Adoption of the agenda

3. Planning of future work on the legal aspects of Electronic Data Interchange (EDI): discussion on negotiability and transferability of rights in goods (maritime bills of lading)

4. Preliminary discussion of other possible topics for future work: issues of registration, incorporation by reference, code of conduct for service providers

5. Other business

6. Adoption of the report

## I. DELIBERATIONS AND DECISIONS

25. The Working Group discussed the issues of negotiability and transferability of rights in goods in the context of transport documents, with particular emphasis on maritime bills of lading, on the basis of the note prepared by the Secretariat (A/CN.9/WG.IV/WP.69). The deliberations and conclusions of the Working Group with respect to those issues are reflected in section II below. The Working Group also discussed the text of draft provisions prepared on those issues, pursuant to the mandate received from the Commission, at a meeting of a joint CMI-UNCITRAL ad hoc group of experts convened by the Secretariat. After discussion, the text of those draft provisions, with some modifications, was adopted by the Working Group. It was noted that the revised draft provisions would be placed before the Commission at its twenty-ninth session, to be held in New York from 28 May to 14 June 1996, for final review and possible insertion in the draft UNCITRAL Model Law on Legal Issues of Electronic Data Interchange (EDI) and Related Means of Communication. The deliberations and conclusions of the Working Group on the draft provisions are set forth in section III below. The text of the draft provisions is annexed to the present report. The Working Group also discussed possible topics to be considered for future work in the areas of EDI and transport law. The preliminary deliberations and tentative conclusions of the Working Group with respect to those topics are set forth in section IV below.

## II. CONSIDERATION OF LEGAL ISSUES OF MARITIME TRANSPORT DOCUMENTS IN AN ELECTRONIC ENVIRONMENT

26. At the outset, the Working Group agreed that, pursuant to the mandate received from the Commission and with a view to providing the basis on which the Commission could make an informed decision as to the feasibility of preparing legal rules in the area of transfer of rights by electronic

means, it would proceed with a general exchange of information regarding the law and practice of transport documents, with particular emphasis on maritime negotiable and non-negotiable transport documents.

## A. Negotiable and non-negotiable transport documents

### 1. General remarks

27. Views were exchanged regarding the use of negotiable and non-negotiable maritime transport documents. There was agreement in the Working Group that there existed a worldwide trend for the promotion of non-negotiable sea way-bills. As to the frequency of use of such non-negotiable documents in practice, the attention of the Working Group was brought to the results of a recent survey conducted by the International Chamber of Shipping (ICS). It was stated that the survey had showed that negotiable bills of lading had virtually passed out of use in certain trades, for example on the Short Sea Liner routes in North Western Europe. On the North Atlantic routes, between North America and Western Europe, non-negotiable documents were also used for a very significant majority of shipments. It was pointed out that these were high-volume trades where transit times were short and where the consequent requirements for fast modern documentary procedures encouraged the use of non-negotiable documents.

28. It was also stated, however, that negotiable bills of lading continued to predominate in many other routes or trades. While such a situation might be due in part simply to lack of awareness among shippers, banks, shipowners and agents, of the benefits of sea way-bills, the following factors were identified by ICS as contributing to the continued use of negotiable bills of lading: banks' instructions to exporters to demand a full set of negotiable bills of lading for transactions where payment was effected by documentary credit; customs import regulations in some countries, which prescribed negotiable bills of lading; higher rates of revenue stamp duty imposed by some countries on way-bills than on negotiable bills of lading; requirements by some countries for original bills of lading to be presented to a consul for legalization; lack of recognition until recently of sea way-bills in the Uniform Customs and Practice for Documentary Credits (UCP) and INCOTERMS published by the International Chamber of Commerce (ICC); the fact that the CMI Uniform Rules for Sea Waybills lacked the international convention status of the Convention for the Unification of Certain Rules Relating to International Carriage by Air (hereinafter referred to as the Warsaw Convention) regarding air way-bills; non-acceptance, sometimes, by cargo underwriters of way-bills as supporting documents for claims in respect of carrier's identity and evidence of contract of carriage; and discouragement by shipping lines, seeking to ensure the payment of freight before releasing the goods, of the use of non-negotiable documents.

### 2. Legal regime

29. The Working Group engaged in a general discussion about the distinction generally made between negotiable and non-negotiable transport documents in legal theory and about the ways in which that distinction was reflected in transport practice and could be expected to affect the use of electronic communications in that area. It was agreed that the functions performed by transport documents needed to be analyzed with respect to both the contractual relationship between the shipper and the carrier, and the contractual relationship between the shipper and the consignee. A further contractual relationship that required consideration was the relationship between the consignee or the shipper and the credit institutions that might become involved in the financing of the underlying transaction between the shipper and the consignee.

30. Within the legal relationship between the shipper and the carrier, i.e., in the context of the

contract of carriage, a document of transport or its functional equivalent was needed first as receipt for the goods by the carrier and as evidence of the contract of carriage. In addition, the document of transport was needed to embody what was generally referred to as the "right of control of the goods", i.e., the right to give instructions with respect to the goods in transit. It was noted that the term "right of control" was used as a label indicating the right to give all sorts of new instructions to the carrier as to the fulfilment of the contract of carriage. For example, the right of control covered the following instructions: to stop the goods in transit; to unload, to warehouse or to re-route the goods; to bring back the goods to the port of embarkation; and to deliver the goods to some other person than the first consignee indicated in the transport document at any stage of the transit, as well as to change the place of delivery of the goods. Within the contractual relationship between the shipper and the consignee, for example in the context of a contract of sale, the document of transport or its functional equivalent might be used to embody the "title" to the goods, i.e., to command the right to claim delivery of the goods and the fulfilment of the seller's obligation under the contract of sale.

31. The function of the document of transport as receipt for the goods by the carrier and as evidence of the contract of carriage was common to all negotiable and non-negotiable transport documents. As regards the right of control of the goods, it was generally felt that no doubt existed as to whether a transport document embodied the right of control initially vested in the shipper, irrespective of whether the transport document was labelled "negotiable" or not. As to the ways in which the initial right of control of the goods could be transferred by the shipper, for example to the consignee in the case where payment for the goods had been received before shipment or during transit, it was observed that the right of control could be transferred under a non-negotiable transport document, although such a transfer could be more easily performed under a negotiable bill of lading. It was stated that the right of control initially vested in the shipper could be transferred either through negotiation of a bill of lading, by operation of a specific clause in the sea way-bill or, after issuance of the sea way-bill, through an additional clause, often stamped on a non-negotiable sea way-bill to indicate that the shipper ceased to have control of the goods. In the absence of a specific clause, the insertion of which necessarily required the agreement of the carrier, a sea way-bill would establish the right of control vested in the shipper but it could not be used to transfer that right. It was stated that under legal regimes applicable to non-maritime modes of transport, the right of control was connected to a certain copy of the transport document. Transfer of the right of control would be operated by the transmission of a specified copy of, for example, a consignment note under the Convention on the Contract for the International Carriage of Goods by Road (CMR), or an air way-bill under the Warsaw Convention.

32. The function of the transport document as embodying title to the goods was specific to negotiable bills of lading. It was pointed out that transactions involving bills of lading normally linked the transfer of the right of control with the transfer of property or other possessory rights in the goods. Bills of lading were, for that reason, often described as "the link" between the contract of sale and the contract of carriage. In that respect, it was widely felt that any attempt to devise a functional equivalent to the bill of lading as a document of title should recognize the need to synchronize the transfer of the right of control under the contract of carriage and the transfer of the possessory rights under the contract of sale.

33. It was stated that the specific function of the negotiable bill of lading as a document of title, although recognized throughout the world, was of uncertain legal origin in many countries, and that it seemed to be rooted in established practice more than in any rule of law. Examples were provided, illustrating the fact that the legal regime of negotiable bills of lading was essentially a combination of various maritime usages and practices that had developed over a long period of time. While those various usages and practices were reflected in statutory law in certain countries and in case law in most countries, the area of maritime transport documents was characterized by a lack of uniformity in the applicable legal regimes, and practice suffered from such a lack of uniformity. As an example of the

difficulties encountered in practice, it was stated that conflicts might arise as to which party had the right to stop the goods during transit. The carrier might be faced with conflicting court orders from two different countries, based on differing interpretations as to which party held the right of control and the title to the goods. It was noted that there existed no international convention dealing with the rights and obligations of the various parties involved and it was generally agreed that the possibility and feasibility of undertaking the preparation of a uniform legal regime for bills of lading, with possible extensions to cover other transport documents, might need to be further discussed by the Commission (see below, paras. 104-108). It was generally agreed, however, that possible uncertainties and disparities as to the legal origin of the bill of lading as a document of title should not deter the Working Group from attempting to devise a functional equivalent of that document, for use in an electronic environment. Adopting the functional-equivalent approach would be neutral with respect to the need to solve substantive law problems that might have existed for many years in the context of traditional paper-based practice. However, it would have the advantage of providing guidance as to how current practice should evolve so as not to be made even less satisfactory by the introduction of electronic communications.

34. As to the way in which the distinction between negotiable and non-negotiable transport documents operated in current practice, it was stated that the distinction between the two kinds of instruments was not always clear and that one of the effects of the introduction of EDI might be to blur the distinction further. Examples were given regarding the obligations that prevailed in various countries with respect to delivery of the goods. It was stated that, under the law of certain countries, a transport document would in any event be regarded as negotiable, irrespective of whether it was regarded as non-negotiable in the country where it had been initially issued. As to banking practice, it was stated that, in many countries, banks would require a negotiable document of title in order to ensure that they had a tangible security in the goods. However, the view was expressed that, under banking practice, it was not uncommon to accept sea way-bills or other non-negotiable transport documents such as air way-bills for the purposes of documentary credit, a practice also recognized under UCP 500. However, it was stated that the legal basis for such banking practice might be found not in the transfer of any right under the transport document but in other contractual relationships between the bank and its customer, for example, in the main account relationship, in an individual agreement granting credit facility, in a specific assignment of its rights by the applicant for the documentary credit, or in any other transaction through which the bank might become pledgee of the goods. It was pointed out that, in most circumstances, acceptance of non-negotiable documents by banks in the context of documentary credit would be determined by the bank's assessment of the credit-worthiness of the applicant and by the availability of legal mechanisms external to the transport document, through which the bank would obtain the same level of legal safety as would have resulted from the transfer of a full set of original bills of lading.

35. As to the impact to be expected from the use of electronic communications on the above-described practices, it was stated that the use of data messages would further reduce the practical distinction between negotiable and non-negotiable transport documents, at least with respect to transfer of the right of control of the goods. With the exchange of a number of EDI messages between the interested parties being envisaged, for example under the CMI Rules for Electronic Bills of Lading (hereinafter referred to as the "CMI Rules"), to replace the issuance and transfer of a paper transport document, it was stated that the same messages would be exchanged between the shipper, the carrier, the consignee and the bank, irrespective of whether they would have relied on a negotiable or a non-negotiable document in a paper-based environment.

36. However, it was generally felt that such practical changes to be expected from the introduction of EDI would carry no immediate effect as to the legal distinction between negotiable and non-negotiable transport documents, which prevailed in many countries and entailed a number of mandatory requirements as to the labelling of such documents. In that respect, the attention of the Working

Group was brought to the fact that certain EDIFACT messages made it possible to use a number of codes to indicate what rights were transferred with the information contained in the message. It was widely felt that, to the extent possible, the distinction between negotiable and non-negotiable rights would need to be carried over to any functional equivalent to transport documents (for continuation of the discussion, see below, paras. 89-91).

3. Multiple originals

37. A question was raised as to how the use of electronic communications could be combined with the current practice to issue more than one original bill of lading. It was pointed out that, in certain countries, such a practice resulted from statutory requirements to issue more than one original, for example with a view to producing an original version of the bill of lading to customs authorities. In response, it was stated that the use of electronic communications would almost necessarily prevent the issuance of multiple originals, since electronic systems would be equipped with security devices intended to prevent such a duplication of messages. It was pointed out that the functional equivalent of a bill of lading would thus be equivalent to a full set of bills of lading. Under current practice, the right of control of the goods could only be exercised by the holder of a full set of bills of lading, but delivery of the goods could be claimed by presentation of only one original bill of lading. While the Working Group widely shared the view that the change to be foreseen with the introduction of EDI should be regarded as an improvement of current practice and a welcome opportunity for a number of States to update their legislation, a question was raised as to whether it was appropriate for the Model Law to encourage the establishment of a new EDI practice, which would not merely imitate paper practice but, in that respect, change it substantially.

38. In response, it was pointed out that, with the development of EDI, the perceived need to protect the issuer against the risk of loss of the original document would no longer exist. In addition, it was stated that the provisions of the draft Model Law and the suggested additional provision contained in draft article "x" did not affect the statutory provisions that might prescribe the issuance of more than one original in certain States. Moreover, it was stated that the effect of legal rules such as the CMI Rules was not to prohibit the issuance of multiple original bills of lading. While the issuance of multiple originals had not been envisaged, it was not inconceivable under those Rules, although the issuance of several originals would require the issuance of several private keys for the same bill of lading.

4. Combination of paper documents and dematerialized equivalents

39. Questions were raised as to the possible interplay of EDI and transactions effected by transfer of paper documents. It was generally felt that the Model Law might need to address situations in which paper-based and EDI communication techniques would be used concurrently in the context of a given transaction. It was suggested that, in the case where a paper bill of lading was converted into a series of data messages after it had been issued in the form of a paper document, specific provisions were needed to avoid that the original paper document could be used at a later point in the transaction, either in good faith or fraudulently. In response to that suggestion, it was stated that, under the current paper-based practice, changes might also occur during carriage that might require the issuance of a new bill of lading, for example where a shipment originally addressed to a single consignee was subsequently split between several consignees. In such a situation, the original bill of lading would be cancelled and new bills of lading would be issued. The prevailing view, however, was that the issue might be more complex if various modes of communications were used and that specific provisions might be needed. As to how best that issue should be addressed, one suggestion was to incorporate provisions in the text of the draft Model Law. Another suggestion was to draw the attention of legislators considering possible enactment of the Model Law to the issue by way of a mention in the Guide to Enactment. It was agreed that further consideration should be given to the need to establish

rules to avoid discriminating against parties that would continue to rely on paper documentation, and also to solve the potential conflict between rights that might be evidenced, at any point in time, simultaneously in electronic form and in the form of paper documents, and that might be transferred in those different forms. A suggestion was made that a rule should be established to the effect that, at any given point in time, a paper title and its equivalent in electronic form could not circulate simultaneously (for continuation of the discussion, see below, paras. 76 and 92-103).

## B. Registries

40. The Working Group noted that, in devising a functional approach in establishing rules for an electronic bill of lading (see A/CN.9/WG.IV/WP.69, paras. 49-52), there were in particular two functions inherent in a paper bill of lading that posed particular difficulties; those functions were the ability of the holder of the bill of lading to transfer the right of the shipper to control the goods and the ability to transfer the title in the goods. Those two functions required reliable assurance that the right or the title had been transferred to the intended, and no other than intended, person (the "singularity" or "uniqueness" feature of the message). It was thought that, in order to create an electronic equivalent to those two functions that possessed the required singularity, it was necessary to establish a form of "registry" of the information about the transfer, although other means were possible.

41. The discussion covered various ways in which such a registry might be established. One method was the one envisaged in the CMI Rules. Under the CMI Rules, it was the carrier who had the registry function in the sense that the carrier gave a unique secret code ("private key") to the shipper and that the shipper, by possessing that private key, was the only person holding the control of, and the title to, the goods, until, by using that private key, the shipper instructed the carrier to cancel the issued private key and issue a new and unique private key to a new holder of those rights. The party who possessed the private key was thus considered to be the holder of the right of control over the goods and the holder of the title to the goods. Through keeping the information about the private key and by issuing any successive and new private keys, the carrier acted as a registry of unique information about the rights in the goods.

42. Another method for establishing a registry was the one used under the "BOLERO project" (see A/CN.9/WG.IV/WP.69, paras. 79-81). The BOLERO system was similar to the system of the CMI Rules, except that the person who registered and held the information about the person having the rights in the goods was not the carrier but an entity other than the carrier. The involvement of such an entity gave rise to questions such as: on whose behalf the registry was acting; the liability for loss that could be attributed to a failure of the computer program; and the liability for negligence of the registry.

43. It was noted that, while both methods were devised specifically to deal with EDI messages replacing the transfer of bills of lading, the method of the CMI Rules had not been tested in practice and the BOLERO method had not gone beyond being tested as a pilot project involving a small number of selected traders and carriers.

44. Various observations were made with respect to the two methods. Under the CMI Rules, unless special measures were taken, the carrier would have the knowledge about the identity of each successive owner of the goods; that knowledge, it was observed, the carrier did not necessarily have and often did not have in the case of a paper bill of lading. It was said that that knowledge made it easier for the carrier to suspect and detect that the person who presented itself as the holder of the private key was not the rightful owner of the goods. Under the BOLERO project, under which the information about the successive owners of the goods were kept by a person other than the carrier, the

question arose as to whether the carrier should have access to the information about the identity of the successive owners of the goods. That question, with respect to which opinions differed, and which would influence the acceptability of the BOLERO project to the users, remained to be answered.

45. The question of the access to information about the sellers and buyers of goods in transit gave rise to a consideration of the broader issue of confidentiality of transport-related information stored in electronic form. The matters that were mentioned in that connection were, in particular: the use of encryption techniques; the access of law-enforcement officers to information; whether under the CMI Rules the goods could be consigned not to a named person but to the bearer of the private key; the possibility for an endorsee of a bill of lading to conceal from the next endorsee or endorsees the identity of the shipper, which might be done by obtaining from the carrier a new bill of lading on which the endorsee appeared as the shipper. It was generally felt that the issues of confidentiality were influenced by different areas of law such as transport law, criminal law as well as trade usages and that, therefore, it was beyond the scope of the draft Model Law to attempt to provide solutions. Furthermore, whatever systems of registry were to be used, the level of confidentiality and the measures to ensure it would have to be acceptable to the users. In that connection, it was remarked that the question of confidentiality in a registry such as the one under BOLERO, in which information of a great number of transactions were to be kept, was potentially more sensitive than a registry under the CMI Rules, where the information held by the carrier only concerned goods in charge of that carrier.

46. Next, it was observed that, under a paper bill of lading, the carrier was responsible for any misdelivery of goods, i.e., delivery to the person who was not the holder of the bill of lading. That responsibility was said to be essentially the same under the CMI Rules in that the carrier was responsible to ascertain who was the person entitled to take delivery of the goods (by virtue of being the holder of the private key) and was responsible for delivering the goods to the right person. Because of this parallelism of responsibility there was no need to elaborate special provisions on liability of the carrier for misdelivery under the CMI Rules.

47. Under the BOLERO project, however, the carrier might not be at fault for misdelivery of goods if the reason for the misdelivery was a mistake committed by the person maintaining the registry or a failure of the computer program. Thus, from the viewpoint of cargo owners, BOLERO gave rise to questions such as the distribution of risk for misdelivery between the cargo owner, the carrier and the registry, and the standard of liability in case misdelivery was a consequence of a mistake. An answer to that question was said to be crucial for a successful launching of the project.

48. Yet another type of registry that was mentioned was one used in some States for recording in electronic form transactions in stocks and bonds. Such registries typically functioned under authorization by the State and had the exclusive right and duty to evidence those transactions. A significant difference between such a registry and the registry under the CMI Rules or BOLERO was that the access to the registry for transactions in stocks and bonds was usually restricted to stockbrokers, while the other registries were meant to be accessed by a broader range of commercial persons such as buyers and sellers of goods, freight forwarders or banks.

## C. Digital signatures

49. The Working Group heard a presentation on "digital signatures", i.e., mathematical codes used in electronic communications in order to ensure: that a particular data message originated from a particular person (authentication function); that the data message had not been altered since its creation and transfer (verification of integrity function); and that the recipient could not alter the message received (non-repudiation function).

50. At the outset, it was stated that digital-signature technology was only one of the methods currently used in practice in order to ensure the security of electronic communications and was not necessarily suitable to all types of electronic communications. On the other hand, it was observed, other methods, such as the one relying on the use of hardware-based cryptographic tokens, known in practice as "smartcards", were not yet fully developed.

51. It was explained that, through the use of particular hardware and software, traders could create a pair of mathematical codes, namely a "private key", which was known only to its author, and a "public key", which was known to the public. In addition, it was stated that the digital signature was the result of a combination of a mathematical code created by the originator to secure the uniqueness of a particular message and of the private and public keys of the originator. The recipient of that data message, using particular software separating the message from the digital signature, could verify both the integrity of the data message and the identity of its author.

52. In response to a question that was raised, it was explained that one of the problems arising in the context of the use of digital signatures was the uncertainty existing with regard to public keys of traders. In order to address that problem, the practice developed the use of trusted third parties, known as certification authorities, public or private, the function of which was to issue certificates identifying a trader and assigning it a public key for use in electronic communications. It was observed that the number of certification authorities was growing rapidly. However, in view of the fact that their operation was based on new technology, the efficiency of which would need to be proven by a longer period of use, there still existed some uncertainty as to whether certification authorities would be able to fully address the need for security in electronic communications.

## III. CONSIDERATION OF DRAFT MODEL STATUTORY PROVISIONS ON MARITIME TRANSPORT DOCUMENTS IN AN ELECTRONIC ENVIRONMENT

53. The Working Group based its deliberations on the text of a draft article, which had been placed before it in the note prepared by the secretariat for the current session, as a result of a meeting of a CMI-UNCITRAL ad hoc group of experts (A/CN.9/WG.IV/WP.69, para. 95). The text of the draft article read as follows:

"Draft Article 'x'. Contracts of Carriage involving data messages

"(1) This Article applies to any of the following actions in connection with or in pursuance of a contract of carriage:

"(a) (i) furnishing the marks, number, quantity or weight of goods;
(ii) stating or declaring the nature or value of goods;
(iii) issuing a receipt for goods;
(iv) confirming that the goods have been loaded;

"(b) (i) notifying a person of terms and conditions of the contract;
(ii) giving instructions to a carrier;

"(c) (i) claiming delivery of goods;
(ii) authorizing release of goods;
(iii) giving notice of loss of, or damage to, goods;

"(d) giving any other notice in connection with the performance of the contract;

"(e) undertaking, irrevocably or not, to deliver goods to a named person or a person authorized to claim delivery;

"(f) granting, acquiring, renouncing, surrendering, transferring or negotiating rights in goods;

"(g) acquiring or transferring rights [, including rights of suit,] and obligations under the contract.

"(2) Where a rule of law requires that, when any action in paragraph (1) is carried out, information be in writing or be presented in writing or in a paper document, in order that a person may acquire or fulfil an obligation or acquire or exercise a right in connection with or in pursuance of a contract of carriage, or provides for certain consequences if the information is not in writing, that rule shall be satisfied if the information is contained in one or more data message.

"(3) If it is intended, through any of the actions in paragraph (1), that a right or obligation is to become exclusively that of one person and if a rule of law requires that, in order to give effect to that intention, information concerning the right or obligation must be communicated to that person in writing or in a paper document, that rule is satisfied if the communication of the information includes the use of one or more data messages, provided a method is also used to give reliable assurance that the right or the obligation has become that of the intended person and of no other person.

"(4) Where any question is raised as to whether paragraph (3) of this article is satisfied, the standard of reliability required shall be assessed in the light of the purpose for which the communication was made and in the light of all the circumstances, including any agreement between the parties.

"[(5) Where a rule of law requires information in connection with a contract of carriage to be stored, communicated, received or otherwise processed, that rule may be satisfied by operation of a registry or of a database [by one of the parties to the contract of carriage or by a third party].]

"(6) The provisions of this Article do not apply to the following: [...]".

## A. General remarks

54. Before entering into an analysis of the individual provisions of draft article "x", the Working Group held a general discussion concerning the relationship between draft article "x" and the main body of the draft Model Law. The Working Group also discussed a number of general issues raised by the matters dealt with in draft article "x", and the manner in which they were dealt with therein.

### 1. Scope of draft article "x"

55. It was noted, at the outset, that draft article "x" focused on negotiability of rights arising from the contract of carriage of goods, and thus contained provisions of a rather specific nature. The view was expressed that such industry-specific provisions were not consistent with the other provisions contained in the draft Model Law, which were of a general nature and did not establish rules specifically geared to any particular type of trade or commercial transaction. With a view to ensuring consistency with the general approach taken under the draft Model Law, it was suggested that the work

should focus on the preparation of provisions dealing with negotiability of rights in goods in general, to be placed in chapter II of the draft Model Law, together with other provisions dealing with the general application of legal requirements to data messages. Furthermore, it was stated that combining in the same model law a set of general provisions along the lines of chapters I to III of the draft Model Law, and specific provisions dealing with transport documents, might raise questions as to the reasons why specific rules were needed only in the area of transport and not in the other areas listed in the definition of the term "commercial" in the footnote to article 1. It was suggested that explanations in that respect would need to be included in the Guide to Enactment of the Model Law.

56. In response, it was recalled that the Commission, at its twenty-eighth session, had endorsed the recommendation of the Working Group that the study to be prepared by the Secretariat should focus on EDI maritime transport documents (A/50/17, para. 309). The prevailing view was that the recommendation made by the Working Group at its twenty-ninth session was particularly appropriate in view of the need for industry-specific provisions in the area of transport of goods by sea. It was pointed out that the carriage of goods was the context in which electronic communications were most likely to be used and in which a legal framework facilitating the use of those communications was most urgently needed. It was also recalled that, throughout the preparation of the draft Model Law, while the Working Group had focused on the general provisions that were necessary to facilitate the use of EDI, it had never excluded the possibility of preparing also industry-specific provisions if the need for such provisions was recognized. It was further recalled that, at the twenty-seventh session of the Commission, while the Working Group had been requested to prepare a draft set of basic "core" provisions regarding the use of EDI for consideration at the twenty-eighth session of the Commission, it had been pointed out that further provisions could be added at a later stage, particularly since EDI was an area of rapid technological development (A/49/17, para. 200).

57. As to the scope of draft article "x", it was stated that, while the work should be focused on transferable maritime bills of lading, solutions should also be sought for the transposition of other transport documents, particularly non-negotiable transport documents, in an electronic environment (see A/CN.9/WG.IV/WP.69, para. 83). It was noted that draft article "x" contained provisions that applied equally to non-negotiable transport documents and to transfer of rights in goods by way of transferable bills of lading. It was generally felt that it should be made clear that the principles embodied in draft article "x" were applicable not only to maritime transport but also to transport of goods by other means, such as road, railroad and multimodal transport. It was noted that the preparation of rules applicable to transport documents and not merely to transferable bills of lading was consistent with the mandate received from the Commission (A/50/17, para. 309).

58. After deliberation, the Working Group decided to proceed with the preparation of provisions regarding transport documents, along the lines of draft article "x", the substance of which was found to be generally acceptable. It was agreed that, should the discussion reveal that some of the rules developed for transport documents provided useful guidance as to how the general issues of transfer of rights through electronic communications should be dealt with, further discussion might be needed as to how to incorporate such principles in a more generally applicable provision.

2. Relationship of draft article "x" with other provisions of the draft Model Law

59. As to the possible location of draft article "x" in the Model Law, various suggestions were made as to how best to make it clear in the structure of the text that the Model Law combined rules that were aimed to be of general application, with provisions specifically designed for transport documents and, possibly, with other industry-specific provisions that might be added at a later stage. A proposal was made to place draft article "x" in a separate chapter of the Model Law. That suggestion was objected to on the grounds that it might insufficiently differentiate the general rules contained in chapters I to III and the specific provisions of article "x". Another suggestion was made

to place draft article "x" in an annex to the Model Law. It was stated that the advantage of placing the provisions of draft article "x" in an annex was that it might make it easier to add other industry-specific provisions, possibly to be developed at a later stage. However, a concern was expressed that placing draft article "x" in an annex could have the unintended result of raising doubt as to the legal value of that article, as to its relevance to the rest of the Model Law, and as to the level of approval with which it was met in the Working Group and the Commission.

60. After discussion, the Working Group agreed that the draft article should appear in the Model Law in a way that reflected both the specific nature of the provisions regarding transport documents and their legal status, which should be the same as that of the general provisions contained in chapters I to III of the draft Model Law. It was agreed that placing the two kinds of provisions on an equal footing was necessary in view of the fact that the specific rules would need to be applied cumulatively with the general rules. Of particular relevance in that respect were the requirements contained in chapter II as to the conditions to be met by functional equivalents of "writing", "signature" and "original", which would also be applicable to functional equivalents of bills of lading. The Working Group decided to suggest to the Commission that chapters I to III of the draft Model Law should be embodied as Part I of the Model Law, while draft article "x" should form Part II. It was stated that adopting such a structure would make it easier to add further industry-specific provisions to the Model Law, as the need might arise. In addition, it was agreed that the interplay of draft article "x" and the other provisions of the draft Model Law might need to be explained in the text of the decision to be made by the Commission when adopting the Model Law, and in its recommendation to the General Assembly.

### 3. Possible extension of the principles embodied in draft article "x"

61. A suggestion was made that it should be possible to derive general rules from draft article "x" (in particular its paragraphs (3) and (4)) with respect to the transfer of rights through the use of functional equivalents of documents of title in an electronic environment.

62. While it was generally agreed that general rules in that respect might be desirable, doubts were expressed as to whether it would be feasible to create functional equivalents for all documents of title merely by extending the principles contained in draft article "x". For example, it was generally felt that work with respect to such documents of title as bills of exchange and stock exchange certificates might reveal complex problems that could not be solved by simple provisions along the lines of draft article "x". While those issues might be suitable for future work, to be undertaken in consultation with the banking industry, it was generally felt that the Working Group could not embark in the preparation of such general rules at the current session.

### 4. Substance of draft article "x"

63. A suggestion was made to add provisions regarding the time as of which possessory rights in goods would be transferred under functional equivalents to bills of lading. It was stated that it might be necessary to establish the point in time when transmission of data messages would carry the legal effect obtained from the physical transmission of a paper bill of lading. That suggestion did not attract sufficient support. It was stated that any attempt to determine the time of transfer of rights in goods would necessarily go into the substance of the legal regime of paper bills of lading, a topic that might be suitable for future work on substantive law (see below, paras. 104-108) but that needed not be touched upon when establishing the functional equivalent to a paper bill of lading. It was pointed out that uncertainties as to the legal situation between the time when a paper bill of lading was sent and the time when it was received already existed in paper-based practice. In many countries, legal rules existed regarding the time as of which rights embodied, for example, in a paper bill of lading sent by mail, were transferred to a consignee. It was generally felt that the Model Law should not interfere

with such rules. It was noted, in addition, that the draft Model Law already contained an optional rule regarding the time and place of dispatch and receipt of data messages. That rule, currently embodied in draft article 14, was generally regarded as offering a solution for the users that might wish to adopt it, and as constituting sufficient guidance for the States that might consider enacting it.

## B. Individual provisions of draft article "x"

### 1. Paragraph (1)

64. The Working Group found the substance of paragraph (1) to be generally acceptable. A concern was expressed that paragraph (1), which established the scope of draft article "x", might be too broadly drafted. It was stated that paragraph (1) would encompass a wide variety of documents used in the context of the carriage of goods, including, for example, charter-parties. The view was expressed that the inclusion of such documents as charter-parties in the scope of article "x" might be regarded as inappropriate under the legislation of certain countries. In response, it was stated that, by dealing comprehensively with contracts of carriage of goods, paragraph (1) was consistent with the decision of the Working Group to cover all transport documents, whether negotiable or non-negotiable, without excluding any specific document such as charter-parties. It was pointed out that, if an enacting State did not wish draft article "x" to apply to a particular kind of document or contract, it could make use of the exclusion clause contained in paragraph (6).

65. It was generally agreed that paragraph (1) was of an illustrative nature and that, although the actions mentioned therein were more common in maritime trade, they were not exclusive to such type of trade and could be performed in connection with air transport or multimodal carriage of goods. It was suggested that the illustrative nature of paragraph (1) should be more clearly indicated, by the introduction of the words "including, but not limited to" in the opening words of paragraph (1). It was also agreed that all references to a "contract of carriage" in draft article "x" should be restricted to the carriage of goods.

66. With respect to subparagraph (g), the Working Group considered whether the words "including rights of suit" in square brackets should be retained. In support of retaining those words, it was stated that a reference to the rights of suit might be needed to make it clear that the transfer of certain rights was intended to entail transfer of the corresponding rights to engage legal proceedings. The view was also expressed that mentioning the rights of suit might facilitate the recognition of the rights of persons who were not parties to the contract of carriage, e.g., consignees and their agents, to sue for delivery of the goods. However, the prevailing view was that, under the laws of most countries, transfer of the substantive rights entailed ipso facto transfer of the corresponding "rights of suit". The retention of the words between square brackets might thus lead to confusion. Furthermore, the Working Group generally agreed that its mandate did not include such vast matters as agency, representation and privity of contract, and that it would be inappropriate for draft article "x" to interfere with national requirements and international conventions on such matters.

### 2. Paragraph (2)

67. The view was expressed that paragraph (2), which, in essence, mirrored the provisions of article 5, inappropriately focused on the transmission of information. It was stated that, in the context of transport documents, it was necessary to establish not only functional equivalents of written information about the actions referred to in paragraph (1), but also functional equivalents of the performance of such actions through the use of paper documents. It was explained that functional equivalents were particularly needed for the transfer of rights and obligations by transfer of written documents. In response, it was stated that, while article 5 dealt with information in writing, paragraph

(2) was precisely intended to address the question whether the actions or functions listed in paragraph (1) could be carried out by electronic means. For example, paragraph (2) was intended to replace both the requirement for a written contract of carriage and the requirements for endorsement and transfer of possession of a bill of lading. It was generally felt, however, that the focus of the provision on the action referred to in paragraph (1) should be expressed more clearly, particularly in view of the difficulties that might exist, in certain countries, for recognizing the transmission of a data message as functionally equivalent to the physical transfer of goods, or to the transfer of a document of title representing the goods. After deliberation, the Working Group decided that the references to "information" in paragraph (2) should be replaced by references to the "actions" referred to in paragraph (1). In response to a suggestion that a reference to written information should be maintained in paragraph (2), it was generally felt that functional equivalents of written information were sufficiently covered by the general provisions of article 5 of the draft Model Law.

68. Various views were expressed and suggestions were made with respect to the substance of paragraph (2). One view was that, while article 5 of the draft Model Law dealt with the situation where the law required information to be in writing, it did not satisfactorily deal with the situation in which, although it was not required by law that information be in writing, a rule of law would provide for certain consequences if such information were voluntarily put in writing. Paragraph (2) might thus provide an opportunity to deal with the latter situation. As they were not necessary in the context of paragraph (2), it was suggested that the words "or provides for certain consequences if the information is not in writing" should be deleted. While some support was expressed in favour of that suggestion, it was generally felt that both of the above-described situations were sufficiently covered by article 5 and by paragraph (2).

69. As a matter of drafting, it was generally felt that wording along the lines of "where a rule of law requires information to be in writing, or provides for certain consequences if it is not, a data message satisfies that rule" might lend itself to misinterpretation. In particular, it was felt that such wording did not make it sufficiently clear that a data message would be regarded as equivalent to writing in both situations where a rule of law required information to be in writing, and where a rule of law provided for certain consequences if that information was not in writing. After discussion, the Working Group agreed that the wording in paragraph (2) should continue to mirror the text of article 5. It was strongly felt, however, that the attention of the Commission should be brought to the ambiguity potentially arising from the text of article 5.

70. With respect to the reference to "a rule of law" in paragraph (2) and, more generally, in draft article "x", the view was expressed that the reference to rules of law should be supplemented by a reference to customs and practice. It was pointed out that, in some jurisdictions, the requirements that information should be produced in documentary form did not derive from a "rule of law" but from customs and practices which were so consistently followed that they acquired a de facto authority, even though they might not have been recognized as binding rules by judicial decision. In support of that suggestion, it was observed that parties, such as port authorities, should not be allowed to interfere with the decision of the shipper and the carrier to use data messages in their contract of carriage, by imposing on them arbitrary customs and practices requiring the use of paper documents. That suggestion was objected to on the ground that, if the Model Law were to overrule requirements of custom or practice which were contractual in nature, the Model Law would have the unintended result of forcing parties to use EDI means of communication. It was recalled that, in the context of its discussion of article 5 of the draft Model Law, the Commission had decided that the scope of article 5 should be confined to rules of law (A/50/17, paras. 231-235). After discussion, the Working Group decided that no reference to custom and practice should be included in paragraph (2). A concern was expressed, however, that a narrow understanding of the words "rule of law" might be inconsistent with the broad meaning of the expression "rules of law" in article 28 of the UNCITRAL Model Law on International Commercial Arbitration, as distinct from the narrower expression "law or legal system of

a given State" in that same article. It was noted that the issue might need to be further discussed by the Commission.

71. After discussion, the Working Group was agreed that paragraph (2) should be redrafted to read along the following lines: "Where a rule of law requires that any action referred to in paragraph (1) be carried out in writing or by using a paper document, or provides for certain consequences if it is not, that rule is satisfied if the action is carried out by using one or more data messages".

3. Paragraph (3)

72. It was pointed out that paragraph (3), in combination with paragraph (4), was intended to ensure that a right could only be conveyed to one person, and that it would not be possible for more than one person at any point in time to lay claim to it. That effect of the two paragraphs was to introduce a requirement which was referred to as the "guarantee of singularity". It was stated that, if procedures were made available to enable a right or obligation to be conveyed by electronic methods instead of by using a paper document, it was necessary that the guarantee of singularity be one of the essential features of such procedures. Technical security devices providing such a guarantee of singularity would almost necessarily be built into any communication system offered to the trading communities and would need to demonstrate their reliability. However, there was also a need to overcome requirements of law that the guarantee of singularity be demonstrated, for example in the case where paper documents such as bills of lading were traditionally used. It was generally felt that a provision along the lines of paragraph (3) was necessary to permit the use of electronic communication instead of paper documents.

73. The view was expressed that paragraph (3) did not quite achieve its objective in that it merely referred to communicating information concerning the right or obligation. For the reasons discussed in the context of paragraph (2), it was generally agreed that a reference to the transfer of the rights or obligations conveyed in the paper document was needed (see above, para. 67). For that purpose, it was proposed to replace the words "information concerning the right or obligation must be communicated" with the words "the right or obligation must be conveyed".

74. Various proposals were made to improve the drafting of paragraph (3). For purposes of clarity, it was proposed that the words "a right or obligation is to become" should be replaced by the phrase "a right is to be granted to, or an obligation is to be acquired by,". In order to clearly establish the scope of the guarantee of singularity contained in paragraph (3), it was proposed to replace the word "exclusively that of one person" by the words "that of one person and of no other person". It was further proposed to delete the words "intended" and "intention", as those words were considered to give rise to questions connected with the definition of intention and the identity of the person having that intention. The following wording was thus proposed for paragraph (3):

> "If a right is to be granted to, or an obligation is to be acquired by, one person and no other person, and if a rule of law requires that, in order to effect this, the right or obligation must be conveyed to that person by the transfer of a paper document, that rule is satisfied if the right or obligation is conveyed by any means which includes the use of one or more data message, provided a method is used to give reliable assurance that the right or obligation has become that of the intended person and of no other person."

75. The Working Group based its deliberations on the above-proposed revised version of paragraph (3). An objection was raised with respect to the proposed deletion of the word "exclusively" and its replacement by the words "one person and no other person". It was pointed out that the latter expression might be interpreted as excluding situations where more than one person might jointly be assigned, in whole or in part, the rights in the goods described in a bill of lading. However, it was

realized that, in practice, such situations would not arise, as carriers did not customarily accept to carry goods under a bill of lading which mentioned multiple assignees, so as to avoid the risk of having to deal with conflicting instructions coming from different consignees. It was also pointed out that the word "person" in the above proposal would not necessarily entail that there could not be multiple consignees, if all parties so agreed. It was pointed out that the word "person" was used, for example, in article 15 of the United Nations Convention on International Bills of Exchange and International Promissory Notes, without such limiting connotation. It was felt that, in order to avoid misunderstandings as to the meaning of the above-mentioned phrase, the Guide to Enactment of the Model Law should contain a comment to the effect that the reference to "one person" would not exclude joint ownership of rights in the goods or other rights embodied in a bill of lading.

76. The Working Group discussed the method for giving the reliable assurance required by paragraph (3) that "the right or obligation has become that of the intended person and of no other person". The view was expressed that such a reliable assurance would require preventing the simultaneous use of electronic and paper bills of lading, a situation which was not dealt with by paragraph (3) or any other provision of draft article "x". It was proposed that a specific provision to that effect should be inserted in draft article "x" (see below, paras. 92-103). However, it was stated that, in practice, it would not be cost-effective or meaningful for carriers to conduct transactions both by EDI and by traditional means and that it was unlikely that there would be bills of lading issued in both forms. It was also stated that the parties themselves, and such third parties as banks, would demand the assurance that there was no duplication of a document of title, since no level of confidence would be achieved by any system that permitted the use of both media at the same time. A question was raised as to whether the reliable assurance referred to in paragraph (3) concerned an assurance as to the integrity of the data transmitted through EDI, or whether it concerned an assurance that, in law, the right or obligation was "that of the intended person and of no other person". In response to that question, it was stated that draft article "x" was not concerned with matters of substantive law, but merely with the system used for transmitting the information or conveying the right or obligation, as the case might be. In that respect, the reliable assurance referred to in paragraph (3) concerned the overall security and reliability requirements of the system as such.

77. It was pointed out that rights or obligations could be assigned by other means than the actual transfer of a bill of lading. In order to clarify that the scope of paragraph (3) was not limited to situations requiring the actual transfer of the document itself, it was agreed that the words "or use" should be inserted between the words "by the transfer" and "of a paper document". After discussion, the Working Group adopted the text of the revised paragraph (3).

4. Paragraph (4)

78. It was generally agreed that security was a crucial element for the success of an EDI-based system of international trade. The Working Group considered the functioning of possible security devices and mechanisms, such as the use of time-stamping, cryptography, access keys, and digital signature. In that connection, the view was expressed that technological advancements were unpredictable and that, as the Working Group lacked the technical expertise in the field of security of electronic information, it should focus its attention on the system of registry, which was held to be the only reliable system thus far established. The Working Group generally felt that it would not be advisable to refer, in the context of draft article "x", to any particular security system or mechanism, so as not to tie down the Model Law to technologies that might conceivably become obsolete in the near future. The view was expressed that, however elaborate and craftily formulated, security standards did not provide an absolute guarantee against the possibility of fraud, which also happened in a paper-based environment. In the event the Working Group considered establishing security standards, the Working Group would also have to consider the sanctions that would follow from the non-observance of such standards. In that connection, the view was expressed that the parties involved

(shippers, carriers, banks, buyers) would naturally develop a workable solution, as some particular groups (such as banks) had already done or were in the process of doing. It was added that security was primarily a matter of system reliability and liability for its failures. Furthermore, whoever exercised the registry function would be liable for the negligence of its own personnel or for the failure to protect the system from unauthorized use.

79. The substance of paragraph (4) was found to be generally acceptable. It was generally felt that paragraph (4) adequately addressed the issue of security and that it would be difficult, at this stage, to formulate a more precise standard of security that would address all possible problems.

80. As a matter of drafting, the view was expressed that a few amendments were required to harmonize paragraph (4) with the new wording of paragraph (3) as adopted by the Working Group. It was thus proposed to replace the words "the communication was made" by the words "the right or obligation was conveyed". After discussion, the Working Group adopted the following text of paragraph (4):

> "Where any question is raised as to whether paragraph (3) of this article is satisfied, the standard of reliability required shall be assessed in the light of the purpose for which the right or obligation was conveyed and in the light of all the circumstances, including any agreement between the parties."

5. Paragraph (5)

81. It was observed that the text of paragraph (5) had been placed between square brackets, in order to serve as a reminder to the Working Group of the importance of registry systems, which were likely to be used for transferring rights in maritime transport in the future. It was generally felt that future work might be needed with respect to the role of registries, and particularly as regards their rights and obligations (see below, paras. 112-113). However, it was generally felt that a provision along the lines of paragraph (5) was not needed in the Model Law and that its inclusion might raise difficult questions, for example, as to the definition of a registry. It was observed that there was no need to authorize specifically the use of registries, since parties were free to establish a registry and there appeared to be no general rule of law prohibiting their use.

82. After discussion, the Working Group decided to delete paragraph (5). It was agreed that the Guide to Enactment of the Model Law should contain an indication as to the importance and foreseeable role of registries with respect to the transfer of rights and obligations.

6. Paragraph (6)

83. The Working Group found the substance of paragraph (6) to be generally acceptable.

C. Additional provisions proposed for insertion in draft article "x"

1. Application of laws or international transport conventions

84. It was pointed out that, as presently drafted, draft article "x" did not deal directly with the application of certain laws to contracts for the carriage of goods by sea. For example, under the Hague and Hague-Visby Rules, a contract of carriage meant a contract which was covered by a bill of lading. Use of a bill of lading or similar document of title resulted in the Hague and Hague-Visby Rules applying compulsorily to a contract of carriage. It was noted that, at present, those Rules would not automatically apply to contracts effected by one or more data message. It was thus proposed that

the following provision should be added to draft article "x":

> "(n) If a rule of law is compulsorily applicable to a contract of carriage which is in or is evidenced by a paper document, that rule shall not be rendered inapplicable to a contract of carriage of goods which is evidenced by one or more data message by reason of the fact that the contract is evidenced by such data message or messages instead of by a paper document."

85. It was recalled that a bill of lading was traditionally in the form of a paper document, and that data messages, although functionally equivalent to a bill of lading, were different in nature from a traditional bill of lading. There was general agreement that it was necessary to provide clearly for the applicability to a carriage contract contained in, or evidenced by, data messages, of the rules of law that would have been applicable to the same contract, had it be contained in, or evidenced by, a bill of lading.

86. It was questioned whether the result intended by the proposed addition of draft paragraph (n) to draft article "x" was not already achieved by article 4 of the draft Model Law, which provided that information should not be denied legal effectiveness, validity or enforceability solely on the grounds that it was in the form of a data message. In that connection, a concern was expressed that the proposed addition might be perceived as limiting the scope of article 4 of the draft Model Law. In response, it was observed that, while article 4 of the draft Model Law ensured that information contained in data messages would be given legal effect, that provision did not deal with the substantive rules of law that might apply to a contract contained in, or evidenced by, data messages. It was also recalled that the purpose of such international conventions as the Hamburg Rules, the Hague Rules, the Hague-Visby Rules or the Warsaw Convention was to establish a liability regime applicable to carriers in international carriage of goods by sea or by air. Each of these instruments contained specific requirements governing its applicability to any given contract. In the absence of a provision such as the proposed paragraph (n), it would be possible for a contractual party wishing to exclude the application of any of those instruments, to argue that contracts of carriage contained in, or evidenced by, data messages did not fulfil the requirements posed for the application of the liability regime. It was added that such an undesirable situation would not be avoided only by a provision such as article 4 of the draft Model Law.

87. Views were exchanged as to the reference, in the proposed paragraph (n), to rules "compulsorily applicable" to a contract of carriage, and the meaning of the phrase "that rule shall not be rendered inapplicable" contained therein. It was suggested that a simpler way of achieving the same result would be to provide that rules applicable to contract of carriage evidenced by paper documents should also apply to contracts of carriage evidenced by data messages. In response, it was stated that, given the broad scope of application of draft article "x", which covered not only bills of lading but also a variety of other transport documents, such a simplified provision might have the undesirable effect of extending the applicability of rules such as the Hamburg Rules and the Hague-Visby Rules to contracts to which such rules were never intended to apply. In the context of the proposed addition to draft article "x", it was important to overcome the obstacle resulting from the fact that the Hague-Visby Rules and other rules compulsorily applicable to bills of lading would not automatically apply to contracts of carriage evidenced by data messages, without inadvertently extending the application of such rules to other types of contracts.

88. After discussion, the Working Group adopted the proposed paragraph (n). It was agreed that an appropriate comment in the Guide to Enactment of the Model Law should explain the precise scope of the proposed paragraph (n) and clarify that it complemented article 4, without limiting or otherwise affecting the status of that article.

2. Negotiable or non-negotiable character of the rights contained in, or evidenced by, data messages

89. It was recalled that, as previously discussed by the Working Group (see above, para. 36), transport documents were subject to various substantive legal regimes and that, in some jurisdictions, the application of one or other legal regime might depend on whether the document was labelled as "negotiable"or "non-negotiable". A concern was expressed that, since draft article"x" did not contain any requirement for data messages to bear such labels, practical difficulties might arise as to determining the legal regime applicable to a contract of transport contained in, or evidenced by, data messages. With a view to accommodating that concern, it was proposed to add the following provision to draft article "x":

> "(*) Where a contract for the carriage of goods under a paper document would have contained the notation 'negotiable' or 'non-negotiable' then the data messages for forming such a contract shall indicate by a code or otherwise if it is 'negotiable' or 'non-negotiable'."

90. Some support was expressed in favour of including the proposed paragraph (*), on the condition that it were amended to indicate whether the negotiability of bills of lading was based on law or contract. In response to a concern that the proposed paragraph (*) dealt essentially with a matter of substantive law, which would better be left for the parties to settle within the framework established by applicable national laws and international conventions, it was stated that the suggested provision did not address directly the issue of negotiability of bills of lading but referred to the will, or obligation, of the issuer to mark transport documents as negotiable or not.

91. The prevailing view, however, was that the suggested paragraph (*) should not be adopted. It was generally felt that the proposed rule unnecessarily interfered with substantive law. It was also felt that adopting such a rule might raise difficulties, particularly in view of the fact that, as previously observed by the Working Group, there might be cases where a given transport document would be regarded as non-negotiable under the laws of the country where it had been issued, and as negotiable in the countries where the goods were delivered. Furthermore, doubts were expressed as to the need for the proposed rule. It was pointed out that paragraph (n) of article"x" provided that, where a rule of law was compulsorily applicable to a contract of carriage which was in, or was evidenced by, a paper document, that rule was not rendered inapplicable to a contract of carriage of goods which was evidenced by one or more data message. Thus, any requirements of substantive law concerning the labelling of transport documents that would have applied to paper documents, would also apply to data messages. It was observed that, in practice, the law applicable to the carriage of goods by sea might require the issuer of a bill of lading to note on it that it was negotiable, but did not usually require that mention be made of the non-negotiable character of a transport document. If the issuer marked the bill of lading as negotiable, the matter was resolved and the draft provision was not necessary. A question might arise in cases where the issuer failed to mark the bill of lading, but the draft provision did not address that situation. After discussion, the Working Group decided not to adopt the suggested paragraph (*).

3. Situations where paper documents and data messages might be used simultaneously

92. The Working Group was reminded of concerns previously expressed by some delegations that paper documents and data messages might be simultaneously used in connection with the same contract of transport (see above, para. 39). It was stated that such concerns should be addressed, while the possibility that the parties revert from data message interchange to paper-based transactions should be preserved, if the circumstances so required. It was pointed out that, while the parties to a carriage contract might conduct their transactions through data messages, third parties, such as customs and port authorities, might continue to require that information be provided in paper form. A provision permitting such conversion to paper should thus be contained in the Model Law. The following

provision, inspired from article 10 of the CMI Rules, was proposed for addition to article "x":

> "(**) Any person who is a party to a contract for the carriage of goods under data messages shall have the option to discontinue the use of data messages, and revert to the use of paper documents for such contract, provided that this would not cause undue delay or cause disruption in the delivery of the goods."

93. Various views were expressed with respect to the merits of the proposed paragraph (**). One view was that the inclusion in article "x" of a rule along the lines proposed was not appropriate. In support of that view, it was observed that the dangers of a hybrid system of communications, namely a system involving both paper and electronic communications, were twofold: that the system might be inefficient or that it might be insecure. If the system were inefficient, e.g., if it presented operational difficulties, parties should be left free to resolve them. If the system were insecure, paragraphs (3) and (4) of article "x" referring to acceptable standards of reliability sufficiently dealt with the matter. With regard to party autonomy, the example was given of the BOLERO System, under which EDI communications were foreseen to take place only among the members of the BOLERO Users Association, while communications with outsiders had to be in paper form. It was observed that there was no reason to impinge on the freedom of such associations to regulate the form of their communications. Moreover, it was observed that the draft provision might, without any good reason, disallow practices in which parties used different means of communications for different purposes.

94. The prevailing view, however, was that the draft provision was useful in that it addressed the fundamental need to avoid the risk of duplicate bills of lading. In support of that view, it was observed that a party, having initially agreed to engage in electronic communications, should be allowed to switch to paper communications if later it became unable to sustain electronic communications. It was stated that, in such a case, party autonomy could produce unfair results in that the stronger party could abuse of its position to force the weaker party to continue EDI communications. In addition, it was observed that the use of multiple forms of communication for different purposes, e.g., paper for ancillary messages and electronic for the bill of lading, did not pose a problem. Even article 10 of the CMI Rules, from which the draft provision was drawn, allowed the issuer of an electronic bill of lading to require a print-out of ancillary messages.

95. Several suggestions were made in order to improve on the draft provision. One suggestion was that emphasis should be placed on the legal effect of the decision of the parties to return to paper communications, rather than on that decision itself, which was a matter to be left to party autonomy. It was suggested that the first sentence of the draft provision should be replaced by language along the following lines: "Any switch between the use of data messages and the use of writing or paper documents, and vice versa, shall not affect the previous paragraphs of this article". While the suggested amendment was found to contain positive elements, the concern was expressed that it might inadvertently result in applying the Model Law even after the parties had decided to revert to paper communications. In addition, it was observed that the amendment did not address the concern expressed that the draft provision in its current version interfered with party autonomy and failed to provide that the parties could use only one means of communication at a time.

96. Another suggestion was that, in order to avoid abuse of the rule and unfair distribution of the cost of switching to paper communications, the rule should be amended so as to provide that the party deciding to "drop down" to paper should bear reasonable costs for its decision. Yet another suggestion was that, in view of the fact that EDI communications were usually based on the agreement of the parties, a decision to return to paper communications should also be subject to the agreement of the parties. That suggestion was opposed to on the ground that a rule along the lines of the draft provision would have to be applied by the bearer of a bill of lading and that it should be up to the bearer to decide whether it preferred to exercise its rights on the basis of a paper bill of lading or on the basis of

the electronic equivalent of such a document, and to bear the costs for its decision.

97. Pursuant to the above-mentioned discussion, the Working Group entrusted an ad hoc drafting group with the task of revising the draft provision. The Working Group continued its deliberation on the basis of a revised draft provision, which read as follows:

> "The use of data messages for the transfer of rights and obligations in connection with a contract of carriage of goods can be discontinued and substituted by the use of paper documents, and vice versa. Such a substitution shall only take effect after notification of the parties, and shall not affect or relieve the rights and obligations of the parties involved."

98. Several views and concerns were expressed with regard to the draft provision as revised. One view was that paragraphs (3) and (4) of draft article "x" sufficiently dealt with the risk of duplicate bills of lading. In addition, it was observed that the risk of duplicate bills of lading was also addressed in article 9 of the draft Model Law, which would ensure that data messages were recognized in court as equivalent to bills of lading. In case of fraudulent duplicate bills of lading, the courts would be left to determine which one was the authentic one. In response, it was observed that, while national laws dealt sufficiently with fraudulent bills of lading, they failed to provide certainty with regard to the unconscious issuance of duplicate bills of lading. In that regard, the example was given of the local agent of a party issuing a paper bill of lading, while the main parties, communicating electronically, issued an electronic bill of lading.

99. A concern was expressed that the revised provision dealt not only with the simultaneous use of multiple means of communication, a practice to be discouraged in any case, but that it also interfered with the freedom of the parties to use one or another means of communication. It was stated that the draft provision could override agreements of the parties, in particular since it was not clear yet whether article 10(1) of the draft Model Law would apply to the provisions of the chapter in which the draft provision might be included. In response, it was observed that the first sentence of the draft provision was permissive and did not affect party autonomy in that it used the verb "can". It was suggested that, in order to avoid interference with party autonomy, the verb "may" might be better used and language along following lines might be added: "without prejudice to the parties providing otherwise". Those suggestions were objected to on the ground that allowing parties to deviate from that rule would have the effect of reintroducing the problem which the rule attempted to address, namely the risk of duplicate bills of lading and of the unfair treatment of the party which could not continue communicating electronically.

100. Other concerns expressed with regard to the draft provision as revised included: that the draft provision introduced uncertainty, since it was not clear who should give notification and to whom; and that it might produce undesirable results to all parties concerned in the contract of carriage, shippers, carriers, consignees and financing institutions providing documentary credit, since the words "vice versa" indicated that, upon notification of the other party, a party might switch from paper to electronic communications. In response to the latter concern, it was observed that, while that possibility theoretically existed, the words "vice versa", in practice, would be meaningless unless the parties had the capacity to communicate electronically.

101. In order to alleviate the above-mentioned concerns, the suggestion was made that the first sentence of the draft provision should be amended to read as follows: "Where data messages are to be used to transfer rights and obligations in connection with a contract of carriage of goods, no paper document affecting such rights is valid unless the data message has been terminated in favour of paper documents".

102. It was noted that the draft provision as revised still raised some questions, including what

would be the context in which data messages could be used to transfer rights and obligations, what was the meaning of the term "data message method", who would notify whom, how and when. In order to address those questions, a second ad hoc drafting group was requested to revise the provision. The revised provision read as follows:

> "Where one or more data message is used to effect the actions in paragraph (1)(f) and (g) of this article, no paper document used to effect such actions is valid unless the use of data messages has been terminated and substituted by the use of paper documents. Such a substitution shall not affect the rights, or relieve the obligations, of the parties involved"

While a concern was expressed that the revised draft provision did not establish any condition for the decision of a party to revert to paper communications, such as the ones included in previous versions of paragraph (**), e.g. notification or absence of undue delay or disruption in the delivery of the goods, the Working Group adopted the revised draft provision and decided that it should be placed immediately after paragraph (2) of draft article "x".

103. Upon conclusion of its deliberations regarding draft article "x", the Working Group considered a revised draft of that draft article prepared by the Secretariat to reflect the decisions taken by the Working Group. The text of draft article "x" as adopted by the Working Group is reproduced as an annex to the present report.

## IV. PRELIMINARY DISCUSSION OF POSSIBLE FUTURE WORK

### A. Future work on issues of transport law other than those concerning EDI

104. At various points during the discussion it was recalled that treaties on the carriage of goods by sea did not deal, or dealt fragmentarily, with issues such as the functioning of bills of lading and sea way-bills and the relation of those transport documents to the rights and obligations between the seller and the buyer of the goods, negotiability and non-negotiability of transport documents, title to goods, retention of title, right of control of goods including the right to stop goods during transit, rights of security created by the transfer of transport documents (see above, paras. 33 and 63). Also national laws on the carriage of goods by sea, but for a few exceptions, did not provide comprehensive and harmonized solutions to those issues. Answers were thus largely to be found in usages, customs and case law, which were not harmonized. The consequence was legal uncertainty in practice.

105. It was considered that the Model Law was not the proper place for providing solutions to those issues, since the Model Law applied to trade law in general, while those issues concerned the law of transport.

106. It was generally thought that it would be useful to review current international practices and international texts governing the carriage of goods by sea with a view to preparing modern, harmonized and more comprehensive solutions to those issues. Among the issues on which uniform law might be needed, it was suggested that issues regarding the functions served by transport documents with respect to the transfer of rights and obligations with respect to goods in transit might need to be dealt with in priority.

107. The view was also expressed that work in that area would provide a useful opportunity to discuss issues of liability under the legal regime of carriage of goods by sea. Among the texts that were suggested to be included in the review were the United Nations Convention on the Carriage of Gods by Sea, 1978 (Hamburg Rules); the different regimes based on the International Convention for

the Unification of Certain Rules relating to Bills of Lading, 1924 (Hague Rules) and the subsequent amendments to the Hague Rules; United Nations Convention on the Liability of Operators of Transport Terminals; and the United Nations Convention on International Multimodal Transport of Goods, 1980.

108. The Working Group considered that it was for the Commission to discuss and decide on the desirability of such future work, its scope and the most appropriate methods of work. It was considered important that the work, from its initial stages, should be carried out in close cooperation with relevant organizations, including those that represented the industries concerned, such as the Comité Maritime International (CMI), the International Chamber of Commerce (ICC), the International Union of Marine Insurers (IUMI), the International Federation of Freight Forwarders Associations (FIATA), the International Chamber of Shipping (ICS) and the International Association of Ports and Harbors (IAPH).

## B. Future work on specific issues regarding the use of EDI and related means of communication

109. Among the topics possibly to be considered for future work by the Commission in the area of electronic communications, the Working Group considered the following: possible standards for digital signatures; issues of registries; incorporation by reference; rights and obligations of service providers; and review of existing international conventions.

### 1. Possible standards for digital signatures

110. The view was expressed that, aside from those aspects relating to "signature" and reliance on messages that were already dealt with in the draft Model Law, more might need to be done on rules for EDI infrastructure before it could achieve its real potential. This was said to be the case especially in international communications involving remote parties, or transactions in which the speed with which contractual events took place in computer systems would necessitate a major upgrading of legal standards on signatures and, more generally, on authentication as to the source and content of data messages. Such standards might take several forms but most current analyses carried out by practitioners focused on the expected growth of "certifying authorities", which could be either private or public actors, operating under some appropriate regulatory standards, which could provide grounds on which reliance could be based on digitalized authorization and identification of messages. This was said to be especially important in an age of information service providers, such as the Internet, which would bring into commercial contact remote parties whose only identification capacity was through computer media.

111. While the Working Group felt that work with respect to certifying authorities might be needed, and that such work would probably need to be carried out in the context of registries and service providers, it was generally agreed that it should not embark in any technical consideration regarding the appropriateness of using any given standard.

### 2. Issues of registries

112. It was stated that the development of harmonized minimum standards that would permit private or governmental registries to interface with each other in cross-border transactions was a key to future development of certain important sectors where electronic communications would be used. Harmonized standards might need to be different for different categories of commercial undertakings. A first step presumably would be to identify key factors that might be necessary for each sector, and then to establish which factors could be provided for in uniform rules. Such an approach could permit collaborative work between UNCITRAL and UNIDROIT, since the latter would shortly be holding a meeting covering registration of certain types of mobile equipment.

113. It was generally felt that the topic might need further consideration. When examining the feasibility of undertaking work in that area, the following might need to be considered: the standards for authorization of private or governmental registries; the criteria for acceptance (and possibly enforcement) of registrations from one jurisdiction to another; the standards for minimum information required to assure reasonable notice and entitlement to register; the effects of registration and notice on third parties in the country of registration and elsewhere; possibly, the implications of registration on secured interests or other commercial finance rights and obligations; the degree of reliance by third parties on such registration as the basis on which contractual, financial or other obligations or actions would be taken; and the extent to which, if any, third parties would have the right to access registries. Agreement or guidance on international standards before disparate systems were established might have the potential to achieve much greater harmonization and benefits.

3. Incorporation by reference

114. The Working Group was generally agreed that work with respect to incorporation by reference in the context of EDI was needed. The view was expressed that, in any attempt to establish legal norms for such incorporation of reference clauses in data messages, the following three conditions should be met: (1) the reference clause should be inserted in the data message; (2) the document being referred to, e.g., general terms and conditions, had actually to be known to the party against whom the reference document might be relied upon; and (3) the reference document had to be accepted, in addition to being known, by that party. It was generally agreed that the topic of incorporation by reference would appropriately be dealt with in the context of more general work on the issues of registries and service providers.

4. Information service providers

115. It was recalled that in its prior work with respect to the draft Model Law, the Working Group had focused on the relationship between the sender and the recipient of a data message, in an attempt to address the legal significance of such messages and the rights and responsibilities of the sender and recipient. To a great extent, the draft Model Law omitted an essential participant in electronic commerce: the intermediary or information service provider who would be responsible for the interface between transmissions from the sender to the recipient, and who would often provide value-added services such as message logging or date stamping, set security standards for message transmission, and serve an important role with regard to assuring users about the reliability of the communication system.

116. The following were mentioned as possible issues to be considered with respect to service providers: the minimum standards for performance in the absence of party agreement; the scope of assumption of risk by the end parties; the effect of such rules or agreements on third parties; allocation of the risks of interlopers' or other unauthorized actions; the extent of mandatory warranties, if any, or other obligations when providing value-added services.

117. It was widely felt that it would be appropriate for UNCITRAL to examine the relationship between service providers, users and third parties. It was said that it would be very important to direct such an effort toward the development of international norms and standards for commercial conduct in the field, with the intent of supporting trade through electronic media, and not have as a goal the establishment of a regulatory regime for service providers, or other rules which could create costs unacceptable for market applications of EDI.

5. Review of existing international conventions

118. It was stated that the Working Party on Facilitation of International Trade Procedures (WP.4)

of the Economic Commission for Europe had been engaged for several years in a survey of definitions of such notions such as "writing" and "signature" in existing international conventions applicable to international trade. It had often been pointed out that most existing definitions did not apply satisfactorily in the context of the use of EDI. In addition, it was stated that WP.4 had also circulated a questionnaire, which was aimed at assessing, more generally, the nature of obstacles to the increased use of EDI, whether such obstacles might arise from legal, administrative, or other requirements.

119. It was generally felt that it would be particularly appropriate for UNCITRAL to review the results of those two projects undertaken by WP.4, with a view to assessing the desirability and feasibility of undertaking work in those areas. The Working Group expressed the wish that the results of those two projects would soon become available and welcomed the possibility to collaborate more closely with WP.4.

Annex

Text proposed for addition to the draft UNCITRAL Model Law
on Legal Aspects of Electronic Data Interchange and related Means of Communication

(as approved by the UNCITRAL Working Group on Electronic Data Interchange
at its thirtieth session, held at Vienna, from 26 February to 8 March 1996)

## PART II. RULES CONCERNING TRANSPORT DOCUMENTS

Draft article "x". Contracts of carriage of goods involving data messages

(1) This article applies to any action in connection with, or in pursuance of, a contract of carriage of goods, including but without limitation to:

(a) (i) furnishing the marks, number, quantity or weight of goods;
(ii) stating or declaring the nature or value of goods;
(iii) issuing a receipt for goods;
(iv) confirming that goods have been loaded;

(b) (i) notifying a person of terms and conditions of the contract;
(ii) giving instructions to a carrier;

(c) (i) claiming delivery of goods;
(ii) authorizing release of goods;
(iii) giving notice of loss of, or damage to, goods;

(d) giving any other notice in connection with the performance of the contract;

(e) undertaking, irrevocably or not, to deliver goods to a named person or a person authorized to claim delivery;

(f) granting, acquiring, renouncing, surrendering, transferring or negotiating rights in goods;

(g) acquiring or transferring rights and obligations under the contract.

(2) Where a rule of law requires that any action referred to in paragraph (1) be carried out in writing or by using a paper document, or provides for certain consequences if it is not, that rule is satisfied if the action is carried out by using one or more data message.

(3) Where one or more data message is used to effect the actions in paragraph (1)(f) and (g) of this article, no paper document used to effect such actions is valid unless the use of data messages has been terminated and substituted by the use of paper documents. Such a substitution shall not affect the rights, or relieve the obligations, of the parties involved.

(4) If a right is to be granted to, or an obligation is to be acquired by, one person and no other person, and if a rule of law requires that, in order to effect this, the right or obligation must be conveyed to that person by the transfer, or use of, a paper document, that rule is satisfied if the right or obligation is conveyed by any means which includes the use of one or more data message, provided a method is used to give reliable assurance that the right or obligation has

become that of the intended person and of no other person.

(5) Where any question is raised as to whether paragraph (3) of this article is satisfied, the standard of reliability required shall be assessed in the light of the purpose for which the right or obligation was conveyed and in the light of all the circumstances, including any agreement between the parties.

(6) If a rule of law is compulsorily applicable to a contract of carriage of goods which is in, or is evidenced by, a paper document, that rule shall not be rendered inapplicable to a contract of carriage of goods which is evidenced by one or more data message by reason of the fact that the contract is evidenced by such data message or messages instead of by a paper document.

(7) The provisions of this article do not apply to the following: [...].